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"I feel it is mine!" – Psychological ownership in relation to natural resources

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Abstract

The use of natural resources often generates conflict among stakeholders. Conflict analysis and management in this sector has traditionally been based on compliance enforcement and/or education. Recently, however, the need for alternative approaches has been increasingly highlighted. In this study, we address the need for in-depth analysis, and introduce the theoretical concept of psychological ownership to improve the understanding and potential management of conflict situations. We suggest that ownership feelings may play a significant role both in successful co-operation, and in conflicts related to the use of natural resources. The study is qualitative in nature. The data consisted of two interview datasets related to nature tourism: nature tourism in private forests and bear watching safaris. We show that the ways the psychological ownership of stakeholder groups is constructed and taken into account in co-operative relationships are of the utmost importance for the sustainability and success of the interplay among stakeholders.

Keywords: psychological ownership, natural resource management, natural resource conflict, private forest owners, wildlife watching, qualitative research

1) Introduction

Numerous studies and practical examples have reported conflicts and disputes related to the use or management of natural resources. Different stakeholder groups typically have different aspirations for the use of resources, which collide at some level with those of others. Conflict over natural resources has been defined as arising when the interests of two or more parties with regard to some aspect of biodiversity are in competition, and when at least one of the parties is perceived as asserting its interests at the expense of one or more of the others (Bennett et al., 2001). White et al. (2009) expanded this definition to include not only conflicting needs with regard to an environmental resource, but also situations in which actors have the same needs but disagree over the distribution of the resource to meet their requirements, or over procedures of resource exploitation and distribution. In a social context, the dimensions of conflict concern not only economic or leisure interests, but also aspects related to urban-rural tensions, economic

development and institutional change, and conflicts between dominant ecological-technological expertise and subordinate forms of local knowledge (von Essen, 2015; Skogen & Krange, 2003; White et al., 2009).

Although natural resource conflicts often appear nonviolent, they are still destructive in nature, as they impede the development of social constructions such as co-operation relationships and sometimes even conservation efforts (von Essen et al., 2015; Woodroffe et al., 2005). One typical mistake in many attempts to resolve conflict in a natural resource context is that the stakeholders are assumed to act as economically rational actors; conflict analysis and management have therefore focused on disciplinary approaches (White et al., 2009), or simply on providing objective information concerning the process. In the analysis and management of potential natural resource conflicts, it is now commonly accepted that ecological, social and economic approaches are not the only ones relevant. The importance of social psychology and interdisciplinary methods in the integration of cultural and biophysical aspects is increasingly recognized (White et al., 2009). For example, according to Redpath et al. (2013), the conflict originates at a deep cognitive level and is linked to changing attitudes and values rooted in social and cultural history (see also Raik et al., 2008; Adams et al., 2003). Attitude formation, however, is not a fully rational process, and sometimes not even a conscious one (e.g. Fishbein & Ajzen, 2011). In addition, the arguments used to justify a particular opinion are often aimed at a wider audience, and may have little to do with how or why the proponent holds the opinion (s)he is defending (van Eemeren, 2009). Similarly, in the case of participatory management practices, it has been recognized that in order to succeed, efforts should focus more on the process than on the tools used in it (Reed, 2008); thus participatory management can easily fail to take into account adequately the emotional aspects that affect stakeholders' opinions (see e.g. Buijs & Lawrence, 2013; Idrissou, 2013; Parkins & Mitchell, 2007). It is vital for these underlying causes of conflict to be identified (Kovács et al., 2016). In the worst case scenario, failed attempts to resolve natural resource conflicts may actually lead to an increased crime rate, for example in the form of illegal poaching (e.g. Pohja-Mykrä, 2016; Filteau, 2012; Sherman, 1993).

In rural areas, local people traditionally perceive natural resources as "their own" (Peltola et al., 2014). With increasing urbanization, however, people may no longer have the natural resources they value in their immediate proximity. Thus, for example, the valuation of natural resources has partly shifted from a utilitarian approach towards existential or non-use values (Kotchena & Reilingb, 2000). In addition, many of the benefits arising from natural resources, including recreational opportunities, attractive landscapes and clean water, are perceived as being shared at a national or even global level (e.g. Schaffner, 2011; White & Martin, 2002). Therefore, others besides the local residents increasingly also feel that they have a "right to enjoy", and a "right to speak", regarding the uses of various kinds of natural resources according to their own values, regardless of the legal owner of the resource or of those who bear the costs of a particular use of it (Jacoby 2001). Thus, for example, private forest owners may have to tolerate some damage, real or perceived, to a forest located close to a city, due to its intensive recreational use (Stein et al., 2009); or the residents of a rural community may have to accept the presence of large carnivores in the area, in the name of conservation (Skogen & Krange 2003). In other words, a number of different interest groups have developed feelings of ownership with regard to natural resources.

This study aims to analyze, how psychological ownership manifests itself in the context of natural resources and how it may affect the co-operation relationships between the stakeholder groups related to the use of these resources. Psychological ownership can be defined as a state in which individuals perceive an object, entity or idea, as though it were "their own" (Furby, 1978, Mattila & Ikävalko, 2003; Pierce et al., 2003). We suggest that these experienced ownership feelings can play a significant role both in successful co-operation

among the different stakeholders, and in conflicts related to the use and management of natural resources. Thus, the aim of the study is also to present a novel theoretical concept in this sector to understand this element in conflict management fully.

In the following, we first describe the theoretical discussion relating to psychological ownership, then apply it to analyzing two cases of potential stakeholder conflict in two contexts of nature-based tourism – nature tourism in private forests and bear watching safaris. The aim is to illustrate the phenomenon of psychological ownership in a natural resource context. At the end, this article discusses on the potential role played by psychological ownership in conflicting opinions related to the use of natural resources, and how a better understanding of this concept may help to resolve such conflicts.

2) Theoretical background: the concept of psychological ownership

Although the concept of “ownership” is often related to a legal regime, according to a number of scholars (e.g. Brown et al 2014; Pierce et al. 2001; Etzioni 1991) it should be understood as a multidimensional concept with legal and psychological aspects. Ownership can thus be seen as “a dual creation: part attitude, part object, part in the mind and part real” (Etzioni 1991, p 466). “Real,” objective ownership is related to economic or legal reality, recognized primarily by society, and the rights that come with ownership are specified and protected by the legal system. Psychological ownership, in contrast, is recognized primarily by the individual, who has a feeling of ownership and assumes the rights felt to be associated with it (Pierce et al., 2001; Pierce et al., 2003). While legal and psychological views of ownership sometimes overlap, there are significant differences between the two.

Psychological ownership as an academic concept originates from organizational research (e.g. Brown et al. 2014; Pierce & Jussila, 2010; Mattila & Ikkävalko, 2003; Pierce et al. 2003; Pierce et. al., 2001). Since its introduction, it has been successfully applied in other fields of research, including consumer behavior and hospitality (e.g. Asatryan & Oh, 2008), entrepreneurship (e.g. Townsend & DeTienne, 2009) and health studies (e.g. Karnilowicz, 2010). More recently the concept of psychological ownership has also been applied in a natural resource context in the cases of forest owners (Lähdesmäki & Matilainen, 2014) and wolf conflict management (Pohja-Mykrä et. al., 2015). The core of psychological ownership is the sense of possession. Psychological ownership can be defined as a state in which the individuals perceive the target of ownership – whether an object, an entity or an idea – as “theirs” (Mattila & Ikkävalko 2003; Pierce et al. 2003; Furby 1978). In other words, it reflects the person’s thoughts and motivation regarding the target of ownership (see Mattila & Ikkävalko 2003; Pierce et. al., 2003; Pierce et. al., 2001). It should also be noted that psychological ownership can exist in the absence of legal ownership. Similarly, people can legally own an object, yet never claim possession of it as their own (Pierce et. al., 2003). In the context of natural resources, for example, in the presence of free access rights, a person using a private forest for recreation can generate feelings of ownership towards it, even though the forest is legally owned by someone else.

While psychological ownership is an individual feeling, it can also manifest itself in collective forms, and a group can collectively feel the object of ownership as “theirs” or “ours” (Pierce & Jussila, 2010). Feelings of collective ownership always entail a sense of shared ownership at the personal level i.e. a person recognizes the ownership feelings of others towards the object of ownership (Pierce & Jussila, 2011). On the other hand, a person can also feel exclusive psychological ownership towards an object, in which case (s)he does not recognize others’ feelings of ownership towards it.

According to Pierce, Kostova and Dirks (2003), the emergence of psychological ownership is related to the fulfillment of both generic and socially generated motives and basic human needs. They specify three different motives: 1) efficacy and effectance, 2) self-identity, and 3) 'having a place'. Later Pierce and Jussila (2011) added a fourth motive, stimulation, to the "genesis of psychological ownership". The first motive, efficacy and effectance, relates to feelings of control. The possibility of being in control, being able to do something, in regard to the object of ownership, and to be able to gain the desired outcome of an action, are important factors in creating psychological ownership (Ikävalko et al., 2006; White, 1959). In addition to serving this instrumental function, psychological ownership also arises out of the expression of self-identity; in other words, people use ownership to define and express their self-identity to others, and to maintain the continuity of that self-identity. The third motive, 'having a place', arises from the need to have a certain space to dwell. It has also been linked in the previous literature with the sense of belonging (Asatryan & Oh, 2008). The fourth motive, stimulation, has been seen as explaining some of the dynamic of psychological ownership, and as one reason why people come to acquire possessions in the first place. Stimulation arises out of an innate human need to seek activation or arousal: ownership, and objects of ownership, are seen as one way in which this motive can be fulfilled (Pierce & Jussila, 2011).

Each of these four motives facilitates the development of psychological ownership – although it should be noted that there is no direct causal connection between the motives as such and psychological ownership. The emergence of a feeling of psychological ownership, i.e. how people come to feel psychological ownership, is often a prolonged process. Pierce et al. (2001) identify three potentially interrelated routes whereby people come to experience psychological ownership: controlling the target of ownership, acquiring intimate knowledge of that target, and investing oneself in it. The first of these routes, being in control over an object, creates feelings of ownership; in other words, the greater the control a person can exercise over an object, the more that object will be psychologically experienced as part of the self (Pierce et al. 2003 cit. Furby 1978). Exercise of control becomes concrete by having access to use of the object. One example described in previous research has to do with the restoration of the moose population (*Alces alces*) in Finland during the 1950s and 60s: after failed attempts to protect the species by traditional top-down methods, the state allowed local hunting clubs to exercise partial control over the planning of moose harvesting. With their growing sense of control, hunters developed feelings of ownership toward the moose; the moose population started to grow, and poaching declined (Pohja-Mykrä et al., 2015).

Second, the more information and better knowledge an individual has over the object, the deeper the relationship between the self and the object, and hence the stronger the feeling of ownership towards it. And finally, investment of the self allows individuals to see their reflection in the target and to feel their own effort in its existence (Pierce et al., 2003). Thus, the investment of individual energy, time, effort and attention in an object causes the self to become identified with the object and to develop feelings of psychological ownership towards it (Ikävalko et al., 2006). According to Bliss and Martin (1989), a forest contributes to the identity of the family that owns it, and forest work/management (related to the idea of self-investment) contributes to the owners' sense of self. Similarly, childhood experience of forest management (both individual investment and knowledge) is seen as shaping the owner's identity (Lähdesmäki & Matilainen, 2014).

Each of these three routes can reinforce any motive of psychological ownership; they are complementary and additive in nature. Any single route, on the other hand, can also independently result in feelings of ownership. Feelings of ownership for a particular target, however, will be stronger when the individual arrives at this state by multiple routes rather than just a single one (Pierce et al. 2003, 95-96). Although there is no

clarity as to whether some routes are more effective in generating psychological ownership than others, Pierce et al. (2003) suggest that the routes of control and investment of the self in the target are potentially the most effective. Several scholars in the field of organization research have also found empirical evidence on the connections between the suggested routes and psychological ownership. Jussila and Puumalainen (2005) tested the connections between all three routes and psychological ownership and produced evidence on these connections. On the other hand, in their study on psychological ownership and job complexity, Brown et al. (2014) observed a positive relationship between psychological ownership and investing oneself in the target of ownership as well as with intimately knowing the object of ownership. Pierce et al. (2004) instead focused especially on experienced control, finding a positive relationship between it and psychological ownership. It should be noted, however, that psychological ownership is also a context-bound phenomenon and thus a wide range of individual, structural (e.g. laws and norms) and cultural factors contribute to the emergence of psychological ownership (Mattila & Ikävalko, 2003; Pierce et al. 2003).

Feelings of ownership toward various objects have important and potentially powerful behavioral effects. Psychological ownership is positively associated with behavior that contributes to the community's well-being and is voluntary, as well as to a willingness to assume personal risk or sacrifice. Furthermore, psychological ownership of a particular object may also promote a sense of responsibility: when an individual's sense of self is closely linked to the object, a desire to maintain, protect, or enhance that identity has been found to result in an enhanced sense of responsibility (Brown et al. 2014; Pierce et al. 2003; Groesbeck 2001). For example, in the previously-mentioned hunters-moose-example, the increased knowledge of the positive impact of a correctly targeted harvest on population productivity, as well as providing locals with control over population management in practice, allowed hunters to develop the feeling of psychological ownership toward moose which was manifested in the form of increased responsibility (Pohja-Mykrä et al., 2015). Psychological ownership, however, can also give rise to certain negative behaviors, related to individuals' unwillingness to share the target of ownership with others, adaptation of other's suggestions for change, or the need to retain exclusive control over the object of ownership (e.g. Baer & Brown, 2012). Such behaviors may also impede cooperation among people (e.g. Baer & Brown, 2012; Brown and Robinson, 2011; Pierce et al. 2003), and lead to a conflict situation related to the use of the target. Recreational users of forests or national parks, for example, can feel very protective of areas that they use regularly and perceive as their own. This can lead to an unwillingness to share the resource with other users (Matilainen & Lähdesmäki, 2014). In addition, when people witness radical alteration in targets that they perceive as theirs, they may come to feel a sense of personal loss, frustration, and stress (Li 2008; Van Dyne & Pierce, 2004).

Typically, several stakeholder groups have an interest in natural resources, and often develop feelings of ownership towards them. Violations of this experienced ownership may cause severe conflict situations. We therefore suggest that in the case of natural resources, the ways in which the psychological ownership of different stakeholders is a) constructed and b) viewed in co-operative relationships are of the utmost importance for the sustainability and success of the interplay between different stakeholder groups. This calls for excellent stakeholder management skills from the facilitator of stakeholder discussions, and for an understanding of the psychological ownership characteristic of the various groups.

2.1. Psychological ownership and proximate concepts in natural resource research

Conceptualizations related to the meanings of natural resources often vary in their disciplinary roots, thereby also highlighting different aspects of the individual's relationship with a resource (e.g. Brehm, 2013; Smith

et. al., 2011; Trentelman, 2009). The literature related to natural resources also contains other concepts with elements related to psychological ownership. In these, the object of emotion is typically seen as a natural site or its' interpretation. We claim, however, that none of these fully encompass the feeling of possessiveness in a way that they could serve as a theoretical tool in understanding it. It should nevertheless be noted that our purpose is not to criticize existing concepts, but merely to point out that to conceptualize and understand the experienced feelings of ownership, the concept of psychological ownership can make a valuable contribution in the field of natural resource research as well.

In previous research studying the emotions and meanings related to natural or wilderness places, concepts often applied have included "**place meanings**" (e.g. Smith et. al., 2011; Kyle et. al., 2004; Cheng et. al., 2003), "**sense of place**" (Semken & Freeman, 2008; Jorgensen & Stedman, 2001; Brandenburg & Carroll, 1995), and perhaps the most common one, "**place attachment**" (e.g. Brehm et. al., 2013; Williams & Vaske, 2003; Stedman, 2002; Williams et. al., 1992). The concept of place attachment has generally been seen as having two dimensions: place dependence and place identity. It thus bears certain similarities to the concept of psychological ownership. Both place identity and the identity dimension of psychological ownership have been suggested to form a component of the construction of a person's self-identity (Pierce et. al., 2001; Dittmar, 1992; Korpela, 1989; Proshansky et. al., 1983). Similarly, "sense of place" can be understood as a multidimensional construct, consisting of beliefs about the relationship between the self and a place, feelings towards the place, and the behavioral exclusivity of the place in relation to alternatives (e.g. Kaltenborn, 1998).

In the concept of psychological ownership, however, the core element is possession – I feel it is "mine" (Pierce et. al., 2003) – while the concepts of place attachment, place meaning and sense of place focus on understanding the wider range of emotions that link a person and a certain place. Accordingly, the dimension of experienced control and the possibility of controlling the object are central elements in the concept of psychological ownership. In research related to the natural environment, on the other hand, place attachment and similar concepts have been more widely applied in efforts to understand reactions to natural resource management in public recreational areas or tourism destinations, typically under conditions where people do not have the direct possibility of controlling the use of natural resources, at least to any significant extent. In addition, place attachment is dependent on a specific physical place, or rather on its interpretation; it does not focus on a natural resource, and is therefore not useful when the subject under study is not connected to any particular physical place, as in the case of wild animals.

According to Bell et. al. (1996), the concept of **human territoriality** can be defined as a set of behaviors and cognitions exhibited by a person or group based on the perceived ownership of the physical space. (Bell et. al., 1996, p. 304). The original definition, which was much in line with the concept of territoriality used in animal ecology (Kärholm, 2007), was modified by Altman in the 1970s to include perceived ownership of places, i.e. feelings towards places that were felt to be owned by an individual or group, but were not necessarily defended (Altman, 1975). Territoriality has also been linked to identity building (Shils, 1975) and has been found to be a useful concept in conflict research in understanding spatial natural resource conflicts such as wars, nationalism and regionalism (e.g. Durrenberger & Pálsson, 1987; Knight, 1982). Later, the use of this concept has also been widened beyond physical spaces (Brown et al., 2005). Human territoriality, similarly to psychological ownership, thus involves a strong idea of possessiveness, of mental ownership. The relationship between the two concepts has been studied in organizational research, and it has been suggested that territorial behavior can be seen as a consequence of psychological ownership (Pierce & Jussila,

2011; Brown et. al., 2005). Territorial behavior can indeed be seen to mediate the ownership feelings to the practical actions (Brown et al., 2005).

Another often applied concept, also related to territorial behavior, is that of **NIMBY (not-in-my-backyard)**; this has been used to both describe and explain the occurrence of local opposition, typically related to changes in the local environment (e.g. Devine-Wright, 2009), and can be seen as a consequence of an experienced sense of ownership. In other words, an experienced sense of psychological ownership is among the elements underlying NIMBY reactions, and can perhaps also be used to explain the NIMBY phenomenon.

There are also some theories related to property rights that can be seen as having links to the concept of psychological ownership. These do not explicitly describe the emotional relationship between the person and the object, but are more related to the multidimensional concept of ownership; we therefore discuss them here as well. The **Theory of Access** (Ribot & Peluso, 2003) distinguishes between the concept of access and that of property. Access is the possibility to derive benefits from resources, while property refers to the right to benefit from them. It is thus connected to the control element of psychological ownership. However, while access is the physical to benefit from natural resources, psychological ownership expresses a personal feeling of ownership; it does not necessarily even imply actual access. Psychological ownership can therefore be seen as a person's wanting to have control and/or maintenance over a resource, independent of their actual power over it, or even the means, processes and relations of gaining, controlling or maintaining access.

Another widely applied theory in natural resource research is the theory of **Common property**. It argues for the potential success of common resource management, and identifies several crucial criteria and conditions for this success to be of long term. These include autonomy and recognition of the community as an institution, proprietorship and tenure rights, the right to make the rules and viable mechanisms for their enforcement, and ongoing incentives in the form of benefits that exceed costs (Baland & Platteau, 1996; Ostrom, 1990). These elements can be seen as being closely connected to the three routes that create a feeling of psychological ownership. The successful management of common resources according to the common property theory thus aims at supporting the development of psychological ownership of the resource.

To sum up: the concept of psychological ownership can be said to have several connections to related concepts already applied in a natural resource context. Some of them even have certain dimensions which parallel psychological ownership. Nevertheless, none of these concepts fully encompass all the elements of psychological ownership. We also consider it important to understand fully the origins of feelings of possessiveness: both the innate and the socially constructed motives contributing to them. Psychological ownership can help to conceptualize these. In relation to natural resources, psychological ownership also offers a concept with potentially broader application than physical place alone.

3) Material and methods

This study is exploratory in nature. Thus, our purpose is to understand the conflicts and co-operation situations related to use of natural resources by using the theoretical framework of psychological ownership (Patton, 2002; Denzin & Lincoln, 1994). The goal is to provide a starting point for further research related to this topic. For this, we use the concept of psychological ownership to analyze two datasets gathered in previous research (Matilainen & Lähdesmäki, 2009; Pohja-Mykrä & Kurki, 2009) related to the use of natural

resources. Both datasets concern nature-based tourism. We chose this context because it typically involves several different kinds of natural resources, utilized in a way that represents a shift away from the traditional use of these resources. It thus serves to illustrate the feelings of ownership experienced by different types of stakeholders. It is also a topic that potentially causes debate over the use of natural resources, especially since a commercial element is involved along with purely recreational activities (Matilainen & Lähdesmäki, 2014). The Nordic context is especially interesting; traditionally in the Nordic countries it has been widely possible for all people to make use of natural resources, regardless of the legal ownership of the resource. In fact, even today in Finland, “Everyman’s Rights”, or the “right to roam”, guarantee free public access to both private and public forests and includes some rights to use them for commercial purposes, for example to gather natural products or conduct nature tourism activities without the permission of the land owner. Similarly, utilization of game resources has been available to all social classes, even though hunting requires permission from the landowner. This custom also forms a large part of the current culture of land and natural resource utilization, even though it has been modified and certain legal restrictions have been introduced. The tradition is nevertheless still clearly visible in ordinary people’s values and attitudes (Matilainen & Lähdesmäki, 2014); especially in rural areas people feel local natural resources to be “their own” (Peltola et al., 2014).

In this study, we analyze psychological ownership from the perspective of an individual’s perceived feelings; in other words, our purpose was to examine the meaning of ownership in terms of the respondents’ own experienced emotions. The data consist of two interview datasets. An approach using in-depth interviews was selected because it allows a holistic understanding on a phenomenon (Patton, 2002); it was therefore, seen as the best way to cast light on the emergence of psychological ownership in a natural-resource context. In the first dataset, psychological ownership is analyzed in the context of the use of private forests for nature tourism; the object of psychological ownership is thus a forest. In the second, the concept is approached in the context of wildlife watching, more specifically the photographing of large carnivores. Here the object of ownership are wild animals, namely the brown bear (*Ursus arctos*). These two different data types were selected to illuminate elements of psychological ownership in different natural resource contexts, one being related to place, the other to a movable element of biodiversity; one privately owned, the other not owned at all (*res communis*). Thus, the idea was not to combine two datasets, but rather to obtain variations in the data (e.g. Patton 2002, pp 240-241).

The first dataset was collected by interviewing two different groups: private forest owners who had experienced the implementation of nature tourism activities on their land, and nature-based tourism entrepreneurs operating in private forests. All companies engaged in activities that could have been implemented in the context of Everyman’s Rights, even though for some activities, the forest owners’ permission was required. Twelve respondents in the first group and ten in the second were interviewed in depth between the autumn of 2008 and the spring of 2009. The second dataset consisted of interviews with bear watching entrepreneurs (three interviews) and local hunters (one interview), carried out in 2008. The data related to the local hunters was strengthened by three additional interviews conducted at the beginning of 2017. This was seen as necessary to ensure the validation of the hunter data. All interviews were recorded with the respondents’ permission and transcribed verbatim.

Table 1. First dataset: nature-based tourism in private forests.

Entrepreneurs interviewed				
Number of interview	Services provided by the company	Age of business (years)	Size of business (employees)	Number of collaborating forest owners
E 1	Hunting, hiking	15	1,5	3
E 2	Hiking, climbing, cycling	11	2-3	15
E 3	Climbing, paintball, motor safaris	10	3	20-30
E 4	Hiking, canoeing	9	0,5	n.a.
E 5	Riding tours	3	3	100
E 6	Hiking, canoeing	10	1	n.a.
E 7	Hiking, hunting, climbing	11	0,5	n.a.
E 8	Riding tours	17	1,5	8
E 9	Wild life watching, canoeing	11	0,5	3
E 10	Hunting, fishing	8	1	5
Forest owners interviewed				
Number of interview	Forest area (hectares)	Duration of ownership (years)	Does the owner live nearby	Co-operation with nature-based tourism
F 1	250	20	Yes	Yes
F 2	235	28	Yes	Yes
F 3	160	28	Yes	Yes
F 4	480	n.a.	Yes	Yes
F 5	50	n.a.	Yes	Yes
F 6	40	23	Yes	Yes
F 7	43	39	Yes	Yes
F 8	> 20	22	yes	Yes
F 9	90	43	Yes	yes
F 10	20		Yes	yes
F 11	60	28	Yes	yes
F 12	40	48	No	yes

Table 2. Second data set: bear watching.

Entrepreneur interviewed			
Number of interview	Product	Age of business (years)	Size of business (employees)
BE 1	Bear watching	19	5-7
BE 2	Bear watching	9	1-3
BE 3	Bear watching	1	2-3
Hunters interviewed, status		Number of bear watching enterprises in the same regional area ()	
H 1	A regional representative of hunters	9 (65 photography hides in 2008)	

H 2	A chairperson of local hunting club (400 members)	2 (the amount of photography hides unknown)
H 3	A regional representative of hunters (15 000 hunters in the region)	n/a
H 4	a chairperson of local game management association (3600 hunters as members)	2-3 (approximately 80 carrion bating places, part unregistered)

In both datasets, the interviews can be characterized as semi-structured and in-depth in nature (Legard et al., 2003). Before the first interview took place, we prepared a list of broad themes that we wanted to discuss with each stakeholder group. These themes included a few relatively specific questions, to prompt the discussion if needed and to provide a deeper understanding of each theme (ibid.). In other words, we saw the interviews as conversations, with a structure that was flexible enough to permit topics to be covered in their ‘natural’ order and with enough room for us to be responsive to the issues raised by the stakeholders (Legard et. al., 2003).

The data analysis method applied in this study had features of deductive qualitative content-analysis, which is generally based on earlier work, such as theories, models, mind maps and literature reviews (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). More specifically, the aim of the qualitative data analysis process was to sort and categorize the data according to the psychological ownership theory of Pierce et. al. (2001). We began by reading through the data several times, to find any indications of how psychological ownership is manifested in the discussion on co-operation vs. conflict between different stakeholders (e.g. Ritchie et. al., 2003; Patton, 2002; Miles & Huberman 1994). In the second phase of the analysis, the dimensions of psychological ownership (control, identity, having a place, and stimulation) were classified from the data, based on the interview excerpts. At the same time, the three routes leading to the feeling of psychological ownership (controlling the target, gaining intimate knowledge of it, and investing oneself in it) were also identified. Finally, we analyzed the role of psychological ownership in co-operation or conflicting relationships and in the arguments used by stakeholders. However, even though the approach was largely theory-driven, in the course of the analysis we aimed to keep the process iterative between the data sets and theory, in the sense that relevant issues not arising from the psychological ownership theory but influencing relationships among the stakeholders were analyzed.

To ensure the reliability of the results, all phases of the analysis and interpretation of the data were a collaborative and iterative effort by the first two authors. In case of any disagreement, the data were jointly reanalyzed until a shared interpretation was reached. Though laborious, this use of analyst triangulation is often considered to increase the credibility of the research (Patton 2002). Furthermore, as Eisenhardt (1989) argues, the use of a number of researchers builds confidence in the findings and increases the likelihood of useful findings. To ensure the transparency of the data analysis, a number of interview excerpts are given below to make it easier for the reader to evaluate our interpretations. In addition, to verify that we had captured the essence of the discussion related to the cases in the interviews, we compared our results to the previous literature related to the two nature tourism contexts that we present.

4) Results: the manifestation of psychological ownership in the context of nature tourism

In this chapter, we describe our results in the two nature tourism contexts. First, we set the scene and describe the interest of each stakeholder group towards the natural resource in question. After this, the arguments that comprise the potential conflict elements between the stakeholder groups are highlighted from the data and the ways in which psychological ownership is manifested in the context of natural resources are analyzed. The results also indicate how acknowledging or ignoring these ownership feelings may contribute to a potential conflict related to the use of that resource. It is important to note that we are not suggesting that psychological ownership is always or necessarily the sole reason for a conflicting situation. We also recognize that the construction of psychological ownership is not necessarily a conscious process on the part of the different stakeholders, or something that they knowingly aim at increasing.

4.1 Nature tourism in private forests

Some 80 per cent of nature-based tourism entrepreneurs in Finland use land areas they do not themselves own (Nousiainen and Tyrväinen, 2002). Due to Finland's landscape, with 76 per cent of the land area covered by forest, nature tourism is often concentrated in forest areas, of which approximately 60 per cent is privately owned (Finnish Forestry Statistical Yearbook, 2014). Private forest owners thus own a critical production factor in nature-based tourism. The policy of free access, the Right to Roam (known in Finland as "Everyman's Rights"), establishes a regulative framework for the use of forests for nature-based activities. Under this policy, such activities as for example hiking, cycling and skiing, horseback-riding, angling, and picking wildflowers, berries and mushrooms are allowed without permission from the landowner. Everyman's Rights do not permit users to damage or disturb nature, or to cause unreasonable disadvantage to the forest owner. It is also based on the occasional or intermittent use of forests (Kuusiniemi et. al., 2000). Nevertheless, Everyman's Rights does provide some opportunities to pursue business activities in private forests (Lehtonen et. al., 2007), as the concepts of "unreasonable disadvantage" and "occasional use" are particularly fluid and imprecise in character. If the utilization of the forest is not intensive (i.e. does not leave significant visible traces in the forest), or occurs randomly in certain forest areas, as for example, in the case of some hiking-based tourism activities, a landowner's permission is not in principle required. Neither can the forest owner forbid the activities based on Everyman's Rights in his or her forests. Typically for intensive nature tourism activities, the forest owner's permission is also required according to the law. However, conducting commercial nature tourism activities on the basis of Everyman's Rights is ambiguous (e.g., Viljanen & Rautiainen, 2007), and various interest groups have their own interpretations of it (Lehtonen et al., 2007).

Nature-based tourism entrepreneurs

The interest in the natural resource (the forest area) on the part of nature-based tourism entrepreneurs in this case was to gain access to suitable forest areas for their business operations. Their activities typically did not exclude other uses of the forest, but some activities, such as horseback-riding tours, were sensitive to other uses as well. According to the interview data, many companies implemented activities requiring extensive forest areas and co-operation with numerous forest owners, in fact up to a hundred. The companies applied various strategies in co-operation with the forest owners, ranging from the proactive (very much a business-to-business approach) to a negligence strategy (ignoring the forest owner totally); these are described in more detail in Matilainen and Lähdesmäki (2014). The entrepreneurs justified their need to access the forests with a discourse which did not highlight their own company's success, but rather focused

on the survival of the nature tourism sector and of rural areas in general by underlining the need to maintain one of the last economic opportunities in rural areas.

“All the time there is this talk that tourism provides a livelihood for Finland... These opportunities should be used, and okay, if it [tourism] brings in money, it should also be made possible. At this moment, in the long run it [limited access to private forest and water areas] limits the creation of income and everything. Our politicians are seriously behind in following developments.” (Int E3)

The interviewed entrepreneurs clearly had ownership feelings towards the forest areas they used. Some of them felt that they had the right to use the area without asking permission from the forest owners, as their activities were small in scale. On the other hand, some of them felt that if there was an agreement with the forest owner over the use of the forest, they had the right to limit other uses of the area which were also based on Everyman's Rights. Both examples reflect the element of control (*efficacy/ effectance*) in psychological ownership, and aspirations to exercise it. The identity motivation also emerged in the interviews: some entrepreneurs justified not asking permission on the grounds that their business activities did no harm to the natural environment, and they always treated it with respect. This indicates that entrepreneurs use the forest area in building their own *identity* as responsible users of natural resources. In such cases, respect for the natural environment overrides respect for private ownership of the area.

“In principle, for example at the campfire site ... we have an agreement to use it ... so yes, we do disturb other users [ask them to go away], if there are any. We don't start asking what they think. This is our campfire site and that's it.” (Int. E3)

“...If I go to the forest [with clients], I always keep the forest clean and undisturbed. We do not leave anything behind and I actually collect other garbage from there, if I see any. Well.. considering that, I think that the forest owner should be actually happy that we go there...” (Int. E7)

The nature-based entrepreneurs also seemed to be actively trying to strengthen/build up their ownership feelings using the routes identified by Pierce et al., 2003. Some of them considered they should have more opportunities to control other activities based on the Everyman's Rights, such as hiking or picking berries, in the area agreed on for their tourism activities. They also thought that public regulations should be developed so that for example a single forest owner would not be able to block the development of long distance trails for hiking, riding or snowmobiling. The purpose of these aspirations is to increase the entrepreneur's control over the use of the forest resource.

“Somehow, if nature-based tourism were just understood at some point as a proper business... Nature tourism should be equivalent to reindeer husbandry and fishing and the like... they already have special access to use nature.” (Int. E9)

The entrepreneurs also hoped for access to information in advance for example on the forest owner's logging plans, so they could adapt their own activities accordingly. Sometimes they also indicated that they have a better basic knowledge of the forest than the owner him/herself does; this clearly contributed to their experienced psychological ownership of the forest, even suggesting that the entrepreneurs felt that this knowledge entitled them to the “right” to use the forest. The entrepreneurs' ownership feelings also seemed

to increase with the amount of time they spent in the forest, as well as with potential investments they had made in a particular area.

I have been [practicing nature tourism] here for years. [...] From one forest owner [name removed] it took years before he came to see my hide for beaver watching...the one I made.. The other one, I think [name removed] has not been here at all... [Int E9]

Private forest owners

Forest owners typically do not gain much benefit from nature-based tourism conducted on their lands. They cannot explicitly forbid the activities based on Everyman's Rights and even when permission is required, currently financial compensation is not typical, most likely due to the tradition of the use of natural resources in Finland. In the cases in which some compensation is paid, it cannot in any way compete with the income gained from timber production, for example. Due to this, the co-operation between the forest owner and the nature tourism entrepreneur is typically based on emotional rather than rational considerations from the forest owners' perspective. Even though the forest owners cannot directly forbid the activities conducted on the grounds of the Everyman's Rights, they have considerable power to influence them in terms of forest management practices or disturbing business operations in some way.

In the interviews, forest owners' attitudes towards nature tourism on their land varied considerably, based on their subjective approach to these activities and their own interests in forest use. In many cases, they did not have anything specific against nature-based tourism, as long as it was not overly intensive and their ownership rights and feelings were respected. However, most of them saw that commercial use is not automatically consistent with the spirit of Everyman's Rights.

"I, at least, understand it so that it [Everyman's Rights] concerns this kind of recreational use and so on.. And if someone is starting to make business out of it, then it is a different story. There should be a law about it." (F6)

The forest owners interviewed highlighted that they should have the ultimate authority with regard to their forest areas; they wanted this authority to be respected in some way, for instance by asking permission out of courtesy, even when the activities planned occurred within the framework of free access under Everyman's Rights. They considered that they had the right to place individual limits on the use of their forests according to their own subjective aspirations and values, such as nature conservation. This is a strong indication both of the *efficacy/effectance* (control) aspect of psychological ownership and of *identity*-building on the part of forest owners: who they are and what values they hold. Any violation against this authority was seen as an insult against ownership; it induced a negative attitude towards nature tourism in general, and could lead to the termination of co-operation.

The role of forest ownership in identity building was also considered to be indirect, providing a resource producing other identities. For example, through forest ownership some owners identified themselves as part of a chain of generations or as a member of a certain community. This may pose a risk to new uses of natural resources, such as nature tourism, since these forest owners tended to use their forests the same way as previous generations.

“I think that the least one could do is to ask for permission. There could always easily be some confrontation otherwise...[if permission is not sought]. Even though one would have some kind of public rights or public access, it would be polite to ask... At least I would like this kind of behavior. (Int. F2)

“After I’m gone I want it [the forest] to stay [within the family]. It’s maybe because my father, who’s already deceased, had already inherited it and it has been kept ever since without damaging it or cutting it too heavily...” (Int. F11)

The analysis of the data yielded seven practical ways in which the forest owners themselves expressed their expectation that their ownership should be respected. These methods are closely connected to the routes leading to the creation of psychological ownership. Interestingly, the owners were unconsciously listing elements that would especially strengthen their sense of psychological ownership of the forest. It should be noted, however, that some of these practical methods are related to both objective and psychological ownership; since the two are mutually reinforcing, and cannot be fully differentiated (Pierce & Rodgers, 2004).

The methods mentioned by private forest owners for maintaining successful co-operation between themselves and nature tourism entrepreneurs included the following: avoiding damage, offering compensation (monetary or otherwise), clear agreements and commitment to them, requesting permission (even if not legally required), regular communication, professionalism and a “good name” on the part of the company, and avoiding disadvantage to the owner. Most of the methods involve the possibility of closer control over potential nature tourism activities. Access to information as to what is happening in the forest is highlighted in most of the methods, in addition, the role of good communication was explicitly referred to by the owners. Under the heading of “avoiding damage”, the forest owners specifically mentioned that the proposed activities should not place obstacles in the way of the owner’s own use of the forest, whether for financial or recreational purposes. The forest owners thus wanted to ensure that they would continue to be able to invest their time and other resources in their forest in the future; at the same time this would enhance their sense of psychological ownership.

Understanding the conditions for successful co-operation

Both parties had a sense of psychological ownership towards the forest areas in question. All the nature tourism entrepreneurs nevertheless respected the legal ownership of the forest owner in their activities. In general, they accepted that the ownership feelings of the forest owners took priority over their own feelings. To safeguard their business activities, they tried to respect these feelings in several ways rather than provoking a situation of overt conflict, even if this might have been justified under the Everyman’s Rights. In other words, the entrepreneurs did not feel that their own psychological ownership was violated by the forest owners as such. Their ownership feelings were inclusive rather than exclusive: they recognized that someone else also had feelings of ownership towards the resource in question, even if they tried to strengthen their own ownership feelings as well. In this case the experience of psychological ownership also had a positive effect, as it increased the entrepreneurs’ responsible behavior towards the natural environment.

One must have the proper attitude. After all, we [the entrepreneurs] go there as guests, so I need to be ready to change my plans and make compromises if some forest owner gets irritated by the activities.” (Int. E4)

"Of course we take it into account if there are paths or trails or something like it, and for instance if they're in a poor condition we don't mess them up any more, and we don't light our own campfires outside the official campfire sites. And we don't harm any trees." (Int. E10)

The interviews show that the forest owners' attitude is much more critical towards intensive commercial use of the forest for nature tourism than towards recreational use or for simpler, less intrusive nature tourism products. In principle, nevertheless, they have nothing against Everyman's Rights. In this sense, they also accept that other stakeholder groups have an interest and some ownership feelings towards their forests. This acceptance is probably due to the Finnish tradition of the use of the natural environment.

"I do not have anything against people going into my forests with Everyman's Rights...that is.. like it always has been... everyone can go and pick berries and mushrooms and use the forests for recreation so to say... if they like the place..." (F10)

4.2 Bear watching

One recent innovation in Finnish nature tourism has been the watching and photographing of large carnivores in the eastern parts of the country, especially in the regions of Kainuu, Kuusamo and Pohjois-Karjala. These regions are the main occurrence areas of the four large mammalian carnivores in Finland: the brown bear, grey wolf, lynx and wolverine. Nature tourism is centered mainly on bear watching. The number of entrepreneurs offering an opportunity to watch and photograph brown bears from hides has increased from a few part-time actors in the first years of the century to twenty full-time actors in 2008 and at least 45 entrepreneurs in 2012 (Eskelinen, 2009; Pohja-Mykrä & Kurki, 2009; Järviluoma, 2014). The product has been designated a "unique selling point", recognized as a specific theme supported by national the "Outdoors Finland" development project during 2009-2011 and 2012-2014. The importance of this nature tourism product has also been recognized in national and regional tourism strategies and programs (e.g. MEK 2008; Pohjois-Karjalan maakuntaliitto, 2007).

The watching and photographing of large carnivores depends heavily on the use of animal by-products as carrion. Regular carrion baiting at the watching sites ensures the consistent and predictable presence of large carnivores. This continuous baiting has been elevated to the focus of the debate by the stakeholders in bear watching, who argue that the presence of carrion increases the density of bears in the area and may affect the bears' feeding habits. On the other hand, the need for innovative nature tourism products as a source of livelihood in remote rural areas is also highlighted in the debate (Pohja-Mykrä & Kurki, 2009).

The bear watching entrepreneurs

For the entrepreneurs, the occurrence of bears is crucial for the success of the business. Their interest is to maintain a sufficiently high bear density in the watching areas throughout the season, and to ensure the daily presence of bears by means of carrion baiting. They justified their activities by highlighting the need for innovative new sources of livelihood in remote rural regions and the economic success of bear watching as a nature tourism product. The interviews indicated several ways whereby bear watching entrepreneurs try to influence the social and normative surroundings in which they work. They brought up their own opinions as to the "right" way to carry out carrion baiting, and how the bears' habituation to humans should be controlled. These opinions differed among entrepreneurs, each one justifying his own approach. They also had strong opinions as to how and when bear hunting should be carried out. Bear hunting in Finland typically

starts on 20 August, which is still one of the busiest tourist seasons for the companies due to their foreign clients from Central Europe. Both of these are examples of the entrepreneurs experienced right to control the bear population and its use, reflecting the presence of effectance element of psychological ownership. In fact, entrepreneurs have had some effect on the above issues. Metsähallitus, the government agency responsible for the administration of state lands, has allowed year-round carrion baiting in some areas and has prohibited hunting in those same areas. We may also speculate that this regulative support has further strengthened the development of psychological ownership towards bears on the part of bear watching entrepreneurs in those areas.

"Getting the bears used to people is one thing. I know some companies, if there are bears around when you're driving an ATV, they need to scare the bears away from the tracks... They go too far in terms of the customers' needs. I do not accept this [in the respondent's own company] ... why cause such a risk to yourself on purpose." (Int. BE2)

"The debate is over the use of state lands ... In negotiations however, we got, [from the State] a license for carrion baiting from October-November to the end of May" (Int. BE1)

According to the data, the bear watching entrepreneurs also highlight the need for innovative new sources of livelihood in remote rural regions and the economic success of bear watching as a nature tourism product. They feel that they have been warmly welcomed to take their place contributing to Finnish nature tourism. According to the entrepreneurs there has been opportunity and space for new companies, and they have gained strong national and regional support from their own stakeholders. This suggests that bear watching entrepreneurs have found their place, i.e. they belong within the tourism industry, thus fulfilling one motive for the sense of psychological ownership.

"The tourism authorities welcomed us with open arms. I was actually surprised to see the interest on their part, but they saw the possibilities of the new summer season product and its image potential." (Int. BE3)

"The Finnish Tourism Board was very interested. They saw this as an important matter, especially with regard to income from tourism." (Int. BE1)

Carrying on a successful bear watching business also entails a good basic knowledge of bears, including in particular their habits and movements. After prolonged watching and photographing of specific bear individuals, the entrepreneurs have gained good knowledge of the differences between individual bears, whom they often identify by name. In addition, bear watching entrepreneurs find themselves to be important actors in reducing the public fear of bears. We can conclude that they are very familiar with the object and have invested time and effort to gain this knowledge, further supporting the feeling of psychological ownership.

"I know, this area has always been one of the best bear areas of Kuusamo. All the landscape characteristics guide the movements of bears to end up here..." (Int. BE3)

"It helps people get rid of their fear of bears. Once you've seen the bears, you're not 100 per cent afraid anymore in the morning, because you've seen how timid they [the bears] are and how they behave in nature. If we could get everybody in Finland to visit the watching hides, no one would be afraid of bears." (Int. BE2)

Representatives of the hunters

The brown bear is a highly valued big game species. Bears are hunted to control their populations but also for their meat and fur, and most of all for the hunting experience. Above all, bear hunting is conducted to

maintain an enduring tradition; hunting is carried out by rural hunting communities with a strong social connotation. In Finland, traditional bear hunting, with dogs specially trained for the purpose, is a common practice. The highest densities both of bear populations and of hunters occur in the same regions as bear watching enterprises. It is therefore in the hunters' interest that this "new" and competing way of using a wildlife resource, bear watching, should not interfere with the tradition. According to the hunters, carrion baiting should be banned to support the bears' natural living habits. Hunters have a voice in the local media, and there is an ongoing debate over the harm caused to bears by carrion-baiting.

"The behavior [of bears] is totally different. They're sociability, they're not afraid of humans at all. You take off and two minutes and fifteen seconds later the first bears are there [by the carrion]. They've got used to people and there have been some near accidents" (Int. H1)

According to the hunters, they have not only the right to hunt bears, but also a responsibility to do so to control the population. Thus, brown bear hunting has a strong impact on the hunters' identity as big game hunters and protectors of rural life and tradition, human safety, and livestock welfare. This reflects not only aspirations to control the resource but also the self-identity motive of psychological ownership. In addition, according to the hunters, in order to maintain the glamour and appeal surrounding bear hunting and bear hunters, it is also important that the bear itself should retain its species-specific traits. Carrion baiting leads the bears to getting used to permanent feeding, and their predatory skills deteriorate. In this sense, hunters also construct their own identity as protectors of the bears.

"And then the locals are looking at us [the hunters] and saying that you should take care of the feasible population sizes, it has been your task [...] but then the legislation is what it is [forbids the hunting around the carrion]" (Int. H4)

"There is also a suggestion that the genetics of the bear is changing. Some said also that there have been 17 bears around this one carrion area. I say that is totally unnatural, not normal... this changes the natural behavior of the bear.. nowadays some bears are even shot in the hunting season so that they just walk towards you.. (Int. H2)

The hunters felt that as representatives of the rural community and defenders of the traditional use of bear resources, their way of maintaining and controlling the population should be safeguarded and thus their goal is to protect this traditional power. The law strictly prohibits the use of carrion-baiting in bear hunting; any attempt to use carrion to lure the bears is treated as an aggravated hunting offence. According to the interviews, the hunters in general feel that the presence of carrion steers the bears' movements in the area and makes it impossible for the hunters themselves to avoid an illegal situation whereby the hunting dogs pick up the bear scent from the carrion. In such cases, hunters feel that they are wrongfully treated in the eyes of the law.

"There's the problem that the entrepreneurs 'hog' every bear for themselves and then when one bear gets shot during the hunting season, there's an official investigation because they feel that their own bear has been shot" (Int. H1)

The interview material also reflects all the route types that according to the theory increase the hunters' sense of psychological ownership towards the bears. The hunters typically have good knowledge of the bear population in their area. They even voluntarily participate in population monitoring of the species. In addition, they control the population. Thus, they have invested considerable time and effort in population management, and as both hunters and local residents typically have firsthand knowledge of the brown bear as a species and as individuals. They have also traditionally been able to control the use of bears. These elements in turn have strengthened the sense of psychological ownership toward bears.

"They [hunters] have invested a lot of time in the bear population census, and there have been financial costs as well" (Int. H1)

Understanding the bear watching conflict

In the case of bear watching, the situation is very conflicted. In a previous study (Pohja-Mykrä & Kurki 2009) it has been concluded that stakeholder conflicts arising from bear watching are due to differing interpretations of the regulations controlling the use of carrion. In the light of this study, we can conclude that the conflict between bear watching entrepreneurs and hunters is at bottom a dispute over the use of a scarce resource, i.e. bears, which seems to lead to resistance to change to the traditional "use" of bears.

"In such a situation, business and recreational hunting are in conflict. Both parties have an interest in the same target, bears, and hunting is therefore hindered in some areas. The conflict is over the same catch." (Int. BE2)

"That is what their [the hunters] goal is, that there should be no carrion baiting at all after the 20th of August [when the bear hunting season starts], which means that this wildlife watching business would end totally. (Int. BE1)

One interpretation is that the conflict arises out the experienced violation of the psychological ownership of both interest groups: hunters and bear watching entrepreneurs. Both parties have extensive knowledge about bears and some control over them, and both have invested time, energy and resources in bears. To some extent, the hunters interviewed recognize the ownership feelings of others toward the resource, and presents certain solutions as to how the same resource might be used in the same place and time. The hunter's own needs, however outweighed those of the entrepreneurs. Bear watching entrepreneurs, on the other hand, found negotiation with hunters to be impossible. The two parties' ownership feelings were in fact at least to some extent mutually exclusive. The bear watching entrepreneurs also clearly competed among themselves over bear resources. In this case the experienced psychological ownership had a severe negative effect on the behavior of the stakeholder groups, impeded potential co-operation between them.

"I'm not for total prohibition of it [bear watching], but there should be some rules. Feeding should end on August 10th, so that the bears will forage on their own. In that case, the bears would remain shy towards people, and it would also allow better hunting." (Int. H1)

"We don't have any interest in talking to the hunters, since we have totally different ways of acting. We're carrying on a business, and we're looking so far ahead that there's simply no such alternative – stopping carrion baiting and putting the business on hold during the hunting season" (Int. BE2)

In addition, both stakeholder parties have made efforts to stigmatize the activities of other party and to gain as much publicity as possible for their own cause, for example in the media. They also feel that the other party is doing the same to them. At its worst, the entrepreneurs' activities were harassed for example with deliberate visits too close to a carrion-baiting site.

"What about the protection and rights of business operations? Even though our business doesn't have a roof or walls, we should be left alone and have legal protection. We can't be seen as outlaws, even if we don't have a lock on the door." (Int. BE3)

"I know that they [the entrepreneurs] have taken members of parliaments there, and of course it is impressive to see the bears..[...] they are doing such "nice PR", so to say.." (Int. H2)

4.3 Summary of the results

Based on the results of our study, all the stakeholder groups described clearly felt psychological ownership towards the natural resource in question. This led to the presumption that they are entitled both to use these resources and to decide how they should be used. As practical methods, many of the “conditions for successful cooperation” mentioned by the stakeholders in both cases seemed to safeguard the existence of the routes leading to the experience of psychological ownership: power of control over the resource, access to knowledge related to it, and the possibility of a close connection to it, i.e. of investing time and effort in it. The manifestations of psychological ownership are summarized in Table 3.

Table 3. Behaviors aiming at safeguarding routes to psychological ownership.

Routes of psychological ownership	Forest owners	Nature tourism entrepreneurs (nature-based tourism entrepreneurs, bear-watching entrepreneurs)	Hunters
Possibility of exercising control over object of ownership	Aim at controlling resource directly	Aim at using third party to increase control over resource through public regulations Protect right of use or control of resource by invoking tradition	Aim at controlling resource directly Aim at using third party to increase control of resource through public regulations Aim at protecting right of use or control of resource by invoking tradition
Knowledge of object of ownership	Aim at communicating/negotiating over planned activities related to use of resource Maintaining status of stakeholder group, i.e. safeguarding access to knowledge	Aim of communicating/negotiating over planned activities related to use of resource No sharing of knowledge to gain sole knowledge of object Maintaining status of stakeholder group, i.e. safeguarding access to knowledge Highlighting trustworthiness of stakeholder group’s knowledge as correct Aim of protecting usage rights (possibility of gaining knowledge) of resource by invoking tradition	No sharing knowledge to gain sole knowledge of object Maintaining status of stakeholder group, i.e. safeguarding access to knowledge Highlighting trustworthiness of stakeholder group’s knowledge as correct Aim of protecting usage rights (possibility of gaining knowledge) of resource by invoking tradition
Possibility of investing time and effort in object of ownership	Maintaining status of stakeholder group, i.e. safeguarding the possibility of own recreational and other uses of forests	Aspirations to mark object of ownership by naming it (e.g. bear), building facilities Maintaining status of stakeholder group Aim of protecting rights of use and access to resource by invoking tradition	Aim of using third party to increase legitimacy of invested time and effort through public game management regulations Maintaining status of stakeholder group, i.e. safeguarding the possibility of traditional hunting and game management activities

			Aim of protecting rights of use and access to resource by invoking tradition
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5) Discussion

The two cases presented here illustrate not only the existence of psychological ownership towards natural resources, but also two different potential conflict situations. In the first case, nature tourism in private forests, there was no actual conflict as the stakeholders in both stakeholder groups recognized the legitimacy of the ownership feelings experienced by the other group towards the resource. Also, the private forest owners accepted other groups' access to their land, even though they were the legal owners of the resource. These feelings were also considered in the co-operation by both parties, which came out in the discussions on the use of the forests. In the second case, the stakeholder groups did not seem to take into account the other parties' ownership feelings, which could have been one reason for the escalation of the conflict. Even though the same individual bear cannot be used for both hunting and wildlife watching, this does not mean that the two activities cannot co-exist at the regional level.

In order to safeguard their psychological ownership in both contexts discussed, the stakeholders tried to legitimize, i.e. make socially acceptable (see e.g. Suchman, 1995) their ownership feelings with different arguments. At the same time, in some instances they tried to stigmatize the conflicting use of the resource, i.e. to make it socially undesirable. The need for arguments arises from coping with challenges or threats to personally meaningful goals (Sten & Albro, 2001). The purpose is typically to make a particular opinion acceptable to the target audience and the arguments invoked need not have much to do with how and why the proponent holds the opinion (s)he is defending (Van Eemeren, 2009).

According to our results, in the context of nature-based tourism in private forests, the interpretation of the spirit of Everyman's Rights was raised to the discussion. In the case of bear watching, the arguments invoked concerned the use of carrion. These discourses have also come out in the previous literature. In their study, Nousiainen and Tyrväinen (2002) found that approximately half of the nature-based tourism entrepreneurs have encountered property-rights-related problems with the forest owners, when operating in private forests. In line with our results, and also according to the previous research, the private forest owners do not see Everyman's Rights in principle as a problem and the majority (95 per cent) do not wish to limit them as an institution (Viljanen & Rautiainen, 2007). However, the majority of them hoped for some restrictions of commercial utilization and thought that they should have a right to limit the activities on their forest property if they so decided (Väkeväinen, 2015). The tendency for desiring to limit the commercial, not recreational, use has also come out in other studies (Sievänen & Neuvonen 2011; Lehtonen et al., 2007; Peltola et al., 2014).

Regarding the bear watching, in line with our results, Tapaninen's (2010) research confirms that the bears' unnatural behavior due to carrion baiting is seen by the local stakeholders to pose a risk to residents as bears get used to the human presence. On the other hand, Järviluoma (2012) states that the bear watching was typically seen as being positive by all stakeholder groups other than hunters and reindeer herders. This has caused ongoing public debate between the stakeholders (Järviluoma, 2012). The hunters have also recognized worries due to the changing behavior of bears, which endangers the traditional hunting options and this debate has also been raised as one of the key points in the national brown bear management plan (Mykrä & Härkönen, 2007) Thus, it can be said that our interview results seem to reflect the previous findings related to the discussion around these two nature tourism cases.

Such publicly accepted “flagship” argumentation, like the ones mentioned above, can be identified in all conflicts. Behind these, however, can be indications of safeguarding the stakeholders’ sometimes quite self-centered ownership feelings and their aspiration to maintain the routes supporting psychological ownership. Table 4 shows the flagship arguments and their interpretation by using the psychological ownership elements emerged from the data.

Table 4. Interpreting arguments presented in the cases in terms of psychological ownership.

Argumentation	Interpretation in terms of psychological ownership.
Forest owners: commercial use inconsistent with spirit of Everyman’s Rights	Need to maintain status as forest owner: authority, respect, control
Nature tourism entrepreneurs: need to support last remaining livelihoods in rural areas	Feel entitled to use forests for business purposes.
Bear watching entrepreneurs: need to support business activities in remote rural areas; carrion baiting can be implemented in such a way that bears’ natural behavior is not endangered	Feel entitled to use wildlife resource for business purposes and in nontraditional way.
Hunters: carrion baiting changes bears’ natural behavior	Fear endangerment of own hunting opportunities and traditional use of bear population.

Traditionally the strategy in resolving conflict situations has been to provide more information, with the focus on overcoming the direct arguments used. Argumentation is always based on information, whether objective, subjective or hypothetical (Besnard & Hunter, 2008); counter arguments are used to challenge this information, and supposedly to change the arguers’ beliefs (Van Eemeren, 2009). For example, a number of studies have investigated the effect of carrion baiting on bears’ natural behavior (Kojola & Heikkinen, 2012) as well as the role of nature tourism in rural economies (Vatanen et al. 2006; Rinne & Saastamoinen, 2005). Demonstrating that a particular argument is false or invalid will not necessarily change the proponent’s opinion, if the “true reason” behind the argument is concerns about, for example, a person’s right to control, expand the opportunity to have knowledge or invest oneself in activities related to the natural resource in question. Thus, it is important to understand, that the stakeholders’ opinions cannot necessarily be changed or the conflict resolved by focusing merely on the explicit arguments on which the public debate has centered. We further consider that safeguarding one’s psychological ownership can often be one of these “true reasons”. The sources of psychological ownership are located in deep human motives, whether innate or socially constructed. In a conflict solution, it is important to focus on supporting the fulfillment of these motives as well. It is also worth noting that it is not always the motive of control (effectance) that needs to be respected. In many cases threats directed at self-identity or at the “having a place” (sense of belonging) are even harder to deal with, as these are highly individual and personal processes. They have indeed been found to be connected to resistance to change (Baer & Brown, 2012; Murtagh et al. 2012; Bonaiuto et al, 2002), which both of the nature-based tourism cases used in this study also represent - a change to the traditional use of these resources. In bear watching, the change focuses on hunting practices and in the case of nature tourism in private forests, to the free recreational use of forests.

As already noted, psychological ownership does not necessarily entail legal ownership of the resource (Pierce et. al., 2004). Similarly, the emergence of psychological ownership does not necessarily require support from the society. In some cases, however, it has been suggested that psychological ownership can be knowingly enhanced or respected, and the conflict managed, by offering a stakeholder group access to the routes that generate ownership feelings; in other words, providing stakeholders with knowledge of the object and the

possibility of controlling the object to some extent, and encouraging them to invest time and effort in the resource. This has been seen as a management method for example in wolf conservation conflicts (Pohja-Mykrä et al., 2015). It is nevertheless also important to recognize that strengthening the psychological ownership of one stakeholder group may enhance strong opposition from others, who already have a sense of psychological ownership toward the object and are unwilling to share it. At worst this can lead to strong resistance and destructive acts by opposing actors (Brown & Robinson, 2011; Pierce et al., 2003). When the experience of psychological ownership is strong at the start of the conflict, it may be difficult to try to reduce it by regulations or other activities, at least in the short term. For example, if a new law were introduced allowing nature tourism business activities in private forests on the basis of the Everyman's Rights, the situation would probably be severely conflicted, as such a decision might violate all the underlying motives of psychological ownership of forest owners. On the other hand, after a few generations of forest owners, such a regulation might be taken as status-quo. The time element, including length of tenure, has been suggested to have an impact on psychological ownership (Pierce & Jussila, 2011). This conjecture, however, needs to be confirmed by further research.

Sometimes the interests of stakeholder groups are simply mutually exclusive. In such cases, the conflict cannot always be resolved (Bisi et al., 2007) and whose ownership feelings are respected is ultimately a political choice. The same forest area cannot be used simultaneously for silent retreats and hiking; the same individual bear cannot be used for wildlife watching and harvested by hunting. However, even in such situations, where the resource is scarce, the concept of psychological ownership could be applied as a tool to understand the deeper underlying reasons for the conflict situation, and to develop potential stakeholder management strategies to manage the conflict.

Following the logic related to the role experienced psychological ownership in the natural resource context, presented in this paper, one interesting example highlighting the options for using psychological ownership to understand natural resource conflicts could be the case of common pool resources. In his study of the economic theory of natural resources, Gordon (1954) came to the conclusion that users of a commons are caught up in an inevitable process that leads to the destruction of the resource on which they depend. The same conclusion was drawn by Hardin (1968) in his study of the tragedy of the commons. The starkness of Hardin's point of view has been applied by many scholars and authorities to "rationalize central government control of all common-pool resources and to paint a disempowering, pessimistic vision of the human prospect" (Ostrom et al. 1999, p. 278). Since then, the inevitability of these conclusions has been contested and the conditions that most likely favor the sustainable use of common-pool resources have been analyzed from a different perspective (Ostrom et al., 1999). Comparing these to the three routes that generate the sense of psychological ownership, we found some similarities. First, Ostrom et al. (1999) found that participants are more likely to adopt effective rules in macro-regimes that facilitate their efforts than in ones that are implemented in a top-down manner; this is related to the effectance motivation of psychological ownership. Whether people are able to self-organize and self-manage, i.e. whether they have control over common-pool resources also depends on the broader social setting, its norms and hierarchy. Secondly, intimate knowledge of the target relates to Ostrom's findings, that the benefits of the welfare of the resource are easier to assess when users have accurate knowledge of external boundaries and internal microenvironments, and have reliable and valid indicators of resource conditions. Thirdly, in developing psychological ownership it is important to invest oneself in the target; this is also recognized by Ostrom et al. (1999), who concluded that in addition to facilitating local efforts, a call for incentives, such as assigning individual rights or shares in the resource, is also valuable, allowing users to invest in the resource instead of overexploiting it. We therefore suggest that the concept of psychological ownership may provide an interesting perspective on the "tragedy" related to the use of scarce common properties as well.

6) Conclusions

The need to understand ownership feelings in natural resource conflicts has been referred to in previous research (e.g. Hill, 2002; Naughton-Treves, 1999), but a suitable concept has not been available for its closer analysis. We suggest that the concept of psychological ownership allows a better understanding both of the reasons behind the conflicts and of cases of successful co-operation relationships among different stakeholder groups in the context of the use of natural resources. The concept can also bring a new approach to the prevention of conflicts related to natural resources. It will not necessarily resolve such conflicts, but can be used to anticipate and manage them.

It should nevertheless be noted that even though our data show the existence of psychological ownership, we are not suggesting that the experience of psychological ownership as such necessarily has negative consequences, such as conflicts or disputes over the use of natural resources. It can be also related to various positive behaviors (e.g. Brown et. al., 2014; Avey et. al., 2008; Mayhew et. al., 2007; O'Driscoll et. al., 2006). A sense of violated psychological ownership, on the other hand, is likely to lead to negative behavior and conflict situations. There were differences between the cases examined. In the case of bear watching both parties clearly felt their ownership violated, while in the case of nature tourism in private forests the nature tourism entrepreneurs did not experience such severe violation of their psychological ownership by the forest owners, although they may have felt it violated by other groups, such as recreational hikers or berry pickers. It is possible that the presence of legal ownership lessens the sense of violation of one's psychological ownership. In the case of bear watching the resource in question is *res communis*, and there is thus no legal ownership right over the bears by either party.

Further research is needed to understand the development and potential management options of psychological ownership in the context of natural resources. A better understanding of the effectiveness of the various routes generating the psychological ownership, for example, would provide further information for conflict management; assessing changes in psychological ownership before and after different forms of intervention would provide valuable knowledge as to the effectiveness of different management tools. As violations of psychological ownership often cause territorial behavioral responses, these could be useful as mediators in studying psychological ownership natural resource conflicts, as has been done in organizational research (e.g. Brown et al., 2005; Brown & Robinson, 2011). In addition, since psychological ownership is manifested at the individual level, but has also been found to have collective elements (Pierce & Jussila, 2011), it would be interesting to study in more depth how collective psychological ownership is formed in a natural resource context. Social norms play a significant role in shaping attitudes (Fishbein & Ajzen, 2011) and can also have an important role in generating shared ownership, or expectations towards it.

One final point should also be emphasized: we do not want to claim that the experience of psychological ownership is the only or even the main reason underlying all potential conflict situations related to the use of natural resources. We fully recognize that human behavior is shaped by a variety of motivations. The emergence of psychological ownership has been found to be dependent both on the personal traits of the owner and on the characteristics of the object of ownership (Pierce & Jussila, 2011). In addition, behavior in general has been found to be context-dependent (Fishbein & Ajzen, 2011). As the data used in this study were qualitative in nature, we cannot show a direct causal connection between experienced psychological ownership and its consequences for the behavior of different stakeholder groups that could be generalized. Further research is needed to confirm or refute this assumption. We consider, however, that applying the concept of psychological ownership in natural resource research can contribute a valuable new conceptual approach to broaden the understanding of this sector. After all, most cases related to managing natural resources are in fact about managing people.

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